

NATURAL GAS FIRED EM 22NG

SPECIFICATION DATASHEET

| | |
|----------------------------------------------------|--------------------------------------------|
| Energy efficiency: | A++ |
| Operational mode: | Mains parallel operation |
| Fuel: | Natural gas, LPG |
| Electrical output (P _{el}): | 22kW(e) ²⁾ min 11 kW |
| Thermal output (P _{th}): | 47 kW ²⁾ min 31.3 kW |
| Fuel consumption: | 68.1 kW ¹⁾ (nett) 75.6% (gross) |
| CHP coefficient: | 0.44 |
| Efficiency: | EN 50465 |
| Total efficiency: | 107% (nett) 97.2% (gross) |
| Electric efficiency: | 32.3% (nett) 29.1% (gross) |
| Thermal efficiency: | 74.7% (nett) 68.1% (gross) |
| Gas-connection pressure: | 20-50 mbar |
| Gas-flow pressure: | ≤16 mbar |
| Flow rate with natural gas: | 6.8 Nm ³ /h |
| Flow temperature: | max. 90 °C |
| Return temperature: | max. 70 °C |
| Max. system pressure: | 6 bar (heating side) |
| Combustion & cooling air requirement: | min. 75 m ³ /h (85 kg/h) |
| Ambient temperature: | 5°C to max. 35°C |
| Exhaust gas emissions: | at 5 Vol% remaining oxygen |
| CO (carbon monoxide): | < 22.5 mg/m ³ (50% TA-air) |
| NO _x (nitrogen oxide): | < 12.3 mg/m ³ (50% TA-air) |
| Exhaust gas temperature: | ~ 50 °C ²⁾ |
| Exhaust gas volume flow: | ~ 83 m ³ /h |
| Exhaust gas mass flow dry: | ~ 91 kg/h |
| Exhaust gas back pressure after CS ⁴⁾ : | max. 5 mbar |
| Sound pressure level CHP: | ~ 47.1 dB(A) (1 m distance) |

CHP: Dimensions, weights and connections

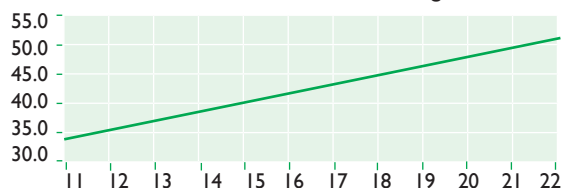
| | |
|-------------------------------------------|----------------------------------------|
| L x W x H CHP: | 1.41 x 0.82 x 0.98 m |
| Weight CHP: incl. oil and water | 895 kg |
| φ x H CS ⁴⁾ : | 0.30 x 1.52 m (w/o flanges) |
| Weight CS ⁴⁾ : | 30 kg |
| Colour CHP: | Pantone 5517C |
| Heating connections (VL): | R 1" Flow (warm) R 1" Return (cold) |
| Exhaust gas connection CS ⁴⁾ : | DN100 |
| Gas connection: | R 3/4" NG R 1/2" LPG |

Motor

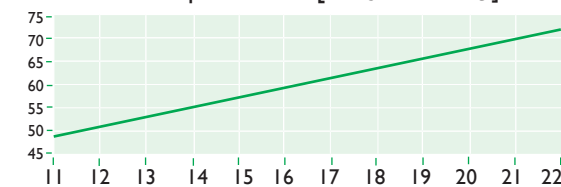
| | |
|-----------------------|---------------|
| Type: | K24 |
| Operation: | Straight line |
| Cylinder: | 4-stroke |
| Displacement: | 4 |
| Nominal engine speed: | 2.4 litres |
| | 1500 l/min |



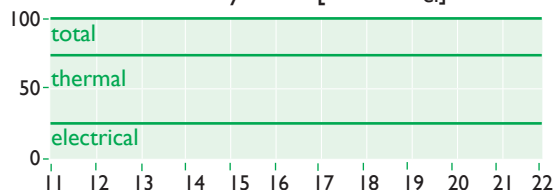
Output curve [kW_{th} to kW_{el}]
Continuous modulation range



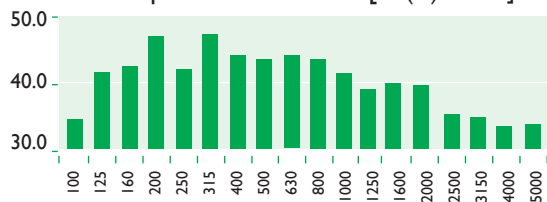
Consumption curve [NM³/h to kW_{el}]



Efficiency curve [% to kW_{el}]



Sound pressure level curve [dB(A) to Hz]⁵⁾



¹⁾ According to DIN ISO 3046-1, tolerance 5%

²⁾ Return temperature 60°C

³⁾ According to EU RL 2004/8/EG with 100% internal use

⁴⁾ Combination silencer

⁵⁾ Test stand measuring without liability

⁶⁾ According to EnEVAndV 2009



Environmentally friendly, independent, reliable energy

PRIME MOVER UNIT

ASYNCHRONOUS GENERATOR EMOD WKASYG

| | |
|------------------|--------------|
| Cooling: | water cooled |
| Power: | 22 kW |
| Voltage: | 400 V |
| Nominal current: | 33 A |
| Frequency: | 50 Hz |
| Operating mode: | S1 |

ELECTRICAL DATA ENERGIMISER 22

| | |
|--------------------------------------------------------|---------------------|
| Max. effective power PA_{max} : | 22 kW |
| Max apparent power SA_{max} : | 23 kVA |
| $\cos \varphi$: | 0.97 |
| Nominal voltage U_N : | 400 V |
| Rated current I_r : | 33 A |
| Grid input: | three phase current |
| Isolated operation intended?: | No |
| Motor-driven start intended: | No |
| Starting current I_A : | - |
| Short circuit current I''_K : | 0.21 kA |
| Short circuit stability of the complete system I_K : | 10 kA |
| Reactive power compensation: | Existing |
| Number of compensation steps: | 1 |
| Reactive power per step: | 9 kVAr _w |
| Detuning factor respectively resonance frequency: | 0 |
| Own requirement: | 0.045 kVA |

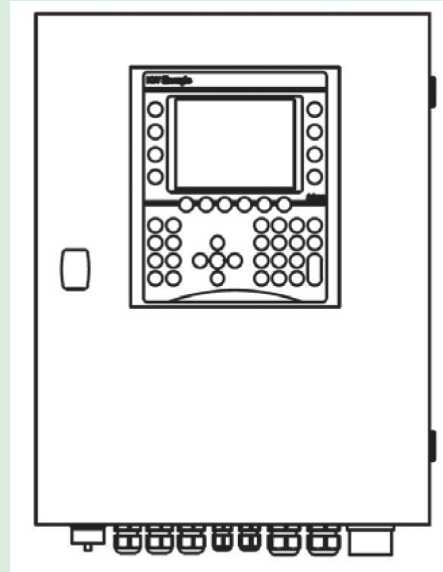
SETTING GRID PROTECTION (VDE-AR-N 41050)

| | |
|-------------------------------------|---------------------|
| Voltage drop protection $U <$ | $0.8 U_n$ (100 ms) |
| Voltage increase protection $U >$ | $1.1 U_n$ (100 ms) |
| Voltage increase protection $U >>$ | $1.15 U_n$ (100 ms) |
| Frequency drop protection $f <$ | 47.5 Hz (100 ms) |
| Frequency increase protection $f >$ | 51.5 Hz (100 ms) |

CABINET: DIMENSIONS AND WEIGHT

| | |
|--------------------------------------------------------------------|----------------------|
| (Wall mounting, connections at the bottom, standard cable set 6 m) | |
| W x D x H: | 0.04 x 0.19 x 0.52 m |
| Weight: | 21 kg |
| Colour: | Pantone 5517C |

Standard reference conditions according to DIN ISO 3046-1: The technical data are based on natural gas H with a heating value of 10.0 kWh/Nm³ (total air pressure 100 kPa, air temperature 25°C, relative humidity 30%, 100m above sea level). Power adjustment at ambient conditions according to DIN ISO 3046-1 respectively DIN 6271-3. The tolerance of the specific fuel consumption is +5% at nominal power and the tolerance of the usable thermal output is 7% at nominal power. We reserve the right to change data and characteristics without prior notice in accordance with our business policy and the ongoing development process.



ENERGIMISER 22 CONTROL BR06

Free programmable SPS control system to control, adjust, calculate, measure and display result. The control system is equipped with a full graphics display and all function buttons, required to operate the combined heat and power plant. The 5.7" LCD display shows information about the system and its current status.

The BR06 can optionally be expanded by a heating control system, requirement peak load boiler (up to 2 boilers), data transfer via LAN and Internet with an error notification via email (only with DSL) and an interface connection to external systems (Ethernet UDP, Mod-Bus RTU, RK 512, 3964R).

